GEOANALYSIS

International Association of Geoanalysts

FROM THE PRESIDENT

Michael Wiedenbeck

It is with great pleasure that the International Association of Geoanalysts, as of this issue, joins the *Elements* constellation as the twelfth participating society. As president of the IAG, it is appropriate for me to introduce our association and to describe some of our core activities to colleagues in the other member societies.

The International Association of Geoanalysts (IAG) was formally established in Vail, Colorado, during the Geoanalysis 1997 conference, hosted by the United States Geological Survey. That event provided a more formal structure to a movement that had actually been initiated some years earlier, when Gwendy Hall and colleagues at the Geological Survey of Canada put out a call for papers for the first Geoanalysis meeting, held in Huntsville, Ontario, in June 1990. The goal of these pioneers was to provide an informal setting for discussing technical advances in the chemical analysis of geological and environmental samples. During those early days, few envisioned this gathering would form the foundation on which a self-sustaining professional association of scientists from industry and academia would be built. Now, some 16 years later, the IAG has grown into a global organization with members in 20 countries on six continents. Members are devoted to improving the laboratory and statistical methods by which the compositions of natural materials are determined.

Proficiency testing is the cornerstone of geochemical metrology in which the analyst reports the composition of an unknown sample determined under normal operating conditions. In such a test, sometimes called a blind intercomparison, the results from many independent laboratories are compiled, and the resulting data set is subjected to a rigorous statistical assessment. A report is then provided to each of the participating laboratories, which indicates to the analyst how he or she performed relative to the other participants. This approach is often the only means by which a research lab or an analytical service provider might flag the presence of a previously unsuspected bias in their analytical method. It is then up to the individual laboratory to assess where they might need to modify their procedure, perhaps by adding an extra acid digestion step or correcting for a previously unsuspected interference. The IAG is currently the only body that routinely produces and distributes powders for the purpose of proficiency testing of bulk-rock analytical routines. Twice annually the IAG's *GeoPT programme* grinds, homogenizes and packages suitable sample aliquots. These are sent to participating labs, which are given three months to report their results. After the reporting deadline has passed, the IAG produces a detailed report, containing only anonymous laboratory identifiers, which is sent to each of the participants. Participation in the GeoPT programme has now grown to over 70 laboratories. Silicate compositions dominate the list of samples that have been distributed, but other "exotic" material types, such as carbonates and loess, have also been employed. The IAG also operates a similar programme, the *G-Probe proficiency testing scheme*, for in situ microbeam analytical techniques.

Reference materials (RMs), which many of us called "standards" during our university days, are a key component for many laboratory techniques. For both the calibration of laboratory equipment and quality control purposes, quality RM is often the weakest link in the entire analytical chain. The lack of a properly characterized, matrix-matched RM often compels analysts to use the next-best material available, an "in-house standard" or another material whose suitability has not been established. In 2004 the IAG was granted observer status at ISO REMCO, the international organization based in Geneva responsible for overseeing the production and certification of RM. As such, the IAG is the organization that represents the interests of the analytical geochemist at the international level. Furthermore, the IAG has developed and published the only ISO-compliant RM certification protocol for geological samples. This protocol was the first endeavour of the IAG's certification committee, which was established in 2002. In 2005 the IAG used this protocol to certify the concentrations of 44 elements in the OU-6 Penrhyn Slate, which remains among the best-characterized rock reference materials currently in existence. With the successful completion of this proof-of-principle project, the IAG's certification committee is organizing the production of further samples of specific interest to the geological and mining communities; the intention is to produce a new certified reference material approximately every 12 months. These materials, along with samples remaining from earlier proficiency testing rounds, are to be distributed through our marketing company, IAGeo Ltd.

Here I have been able to touch on but some of the activities of our association, though many other important endeavours are worth a brief mention: support of the journal *Geostandards and Geoanalytical Research*, sponsorship of the triennial Geoanalysis Conference Series, and funding of our Early Career Researcher Award. I am looking forward to describing these other exciting initiatives in future issues of *Elements*.

Michael Wiedenbeck
GeoForschungsZentrum
Postsdam, Germany.
President, International
Association of Geoanalysts